Notice of Allowability	Application No.	Applicant(s)	
	10/057,430	ELTAWIL ET AL.	
	Examiner	Art Unit	
	Jason M. Perilla	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the amendment filed January 23, 2006*.

2. ☒ The allowed claim(s) is/are *claims 1-4, 6, 7, 12-27, and 38-52 respectively renumbered as claims 1-37*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date 20060331.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date *20060331*.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

1. Claims 1-4, 6, 7, 12-27, and 38-52 are pending in the instant application.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Jon Christensen on March 30, 2006.

The application has been amended as follows wherein the following versions of claims 1, 2, 4, 6, 14, 16, 19, 22, 38, 39, 43, 45, 47, 48, 51, and 52 replace all prior versions in their entirety:

1. A receiver section for a spread spectrum communication system, the receiver section comprising:

a plurality of processing units, at least one of the plurality of processing units including a plurality of configurable correlator resources, wherein at least one of the plurality of configurable correlator resources is configurable to perform a plurality of correlation functions;

a signal acquisition section, the signal acquisition section coupled to receive analog communication signals, the signal acquisition section outputting a sampled ~~signals~~ data stream corresponding to a plurality of multipath components, the plurality of processing units receiving data signals and performing correlation functions on the data signals;

a controller, coupled to the plurality of processing units over a control signal path, the controller outputting configuration information to the plurality of processing units to configure the plurality of processing units.

2. The receiver section of claim 1, wherein the controller outputs the configuration information to define a configuration for the at least one of the plurality of processing units and the

at least one of the plurality of processing units maintains that configuration until the controller outputs a new set of configuration information.

4. The receiver section of claim 1, wherein the at least one of the plurality of configurable correlator resources performs a first correlator function when the configuration information requires the at least one of the plurality of configurable correlator resources to perform the first correlator function, and wherein the at least one of the plurality of configurable correlator resources performs ~~peforms~~ a second correlator function when the configuration information requires the at least one of the plurality of configurable correlator resources to perform the second correlator function.

6. The receiver section of claim 4, wherein the controller outputs the configuration information to define a configuration of the at least one of the plurality of processing units and the at least one of the plurality of configurable correlator resources, the at least one of the plurality of processing units and the at least one of the plurality of configurable correlator resources maintaining that configuration until the controller outputs a new set of configuration information.

14. The receiver section of claim 12, wherein, for each of the multipath components tracked by the receiver section, ~~the~~ a configuration of ~~the at least~~ a respective one of the processing units configures at least three of the plurality of configurable correlator resources within the ~~at least~~ respective one of the processing units, one of which correlator resources assumes ~~the~~ a timing function, ~~one~~ a second of which correlator resources assumes ~~the~~ a pilot function, and ~~one~~ a third of which correlator resources assumes ~~the~~ a data function.

16. The receiver section of claim 1, further comprising:

an interpolator coupled to the signal acquisition section and receiving ~~a~~ the sampled data stream, the interpolator generating an interpolated data stream including data derived from the sampled data stream; and

a timing selection circuit identifying one of the values of the interpolated data stream as a representative data sample.

19. The receiver section of claim 16, further comprising a frequency correction circuit comprising a multiplier coupled to the interpolator ~~and coupled to a multiplier~~; the multiplier receiving a ~~digital signal~~ the sampled data stream and outputting ~~the~~ a sampled data stream derotated by a signal responsive to a signal generated by the frequency correction circuit.

22. The receiver section of claim 1, further comprising:

an interpolator coupled to the signal acquisition section and receiving a the sampled data stream, the interpolator generating an interpolated data stream including data derived from the sampled data stream; and

a data bus receiving the interpolated data stream from the interpolator and providing the interpolated data stream to at least one of the plurality of processing units.

38. The receiver section of Claim 1, wherein the plurality of processing units includes first and second processing units, the plurality of configurable correlator resources includes first and second configurable correlator resources, and the plurality of correlation functions includes first and second correlation functions, ~~the first configurable correlator resource being in the first processing unit and the second configurable correlator resource being in the second processing unit,~~ wherein the first correlator resource is configured to perform the first correlation function and the second correlator resource is configured to perform the second correlation function, wherein the first and second correlator resources perform the first and second functions on a first multipath component.

39. The receiver section of Claim 1, wherein the plurality of configurable correlator ~~resrouces~~ resources includes first, second, third, fourth and fifth configurable correlator resources, wherein, when a transmitter transmits a first signal defined by three scrambling codes to the receiver section, the third, fourth and fifth configurable correlator resources are configured to perform data channel functions, and wherein, when the transmitter transmits a second signal defined by two scrambling codes to the receiver section, the third and fourth configurable correlator resources are configured to perform data channel functions and the fifth configurable correlator resource is powered down.

43. A receiver section for a spread spectrum communication system, the receiver section comprising:

a plurality of processing units, at least one of the plurality of processing units configurable to provide a plurality of correlation functions, at least one of the plurality of processing units ~~includes~~ including a plurality of configurable correlator resources, the plurality of configurable correlator resources configurable in response to configuration information to assume one of the plurality of correlation functions, the plurality of correlation functions including a timing function, a pilot function, and a data function;

a signal acquisition section, the signal acquisition section configured to receive analog communication signals, the signal acquisition section outputting a sampled ~~signals~~ data

stream corresponding to a plurality of multipath components, the plurality of processing units receiving data signals and performing correlation functions on the data signals;

a controller, coupled to the plurality of processing units over a control signal path, the controller outputting the configuration information to the plurality of processing units to configure the plurality of processing units; wherein, for each of the multipath components traced by the receiver section, the configuration of the processing units configures at least three of the plurality of configurable correlator resources, one of which assumes the timing function, one of which assumes the pilot function and one of which assumes the data function.

45. The receiver section of Claim 43, wherein the configuration information determines whether one or more of the plurality of configurable correlator resources is powered up or powered down.

47. The receiver section of claim 43, further comprising:

an interpolator coupled to the signal acquisition section and receiving a the sampled data stream, the interpolator generating an interpolated data stream including data derived from the sampled data stream; and

a timing selection circuit identifying one of the values of the interpolated data stream as a representative data sample.

48. A receiver section for a spread spectrum communication system, the receiver section comprising:

a plurality of processing units, each of the plurality of processing units configurable to provide a plurality of correlation functions and including a plurality of configurable correlator resources, the plurality of configurable correlator resources configurable in response to configuration information to assume a correlation function selected from the group of early/late timing correlator, pilot correlator, and data channel correlator;

a signal acquisition section, the signal acquisition section configured to receive analog communication signals, the signal acquisition section outputting a sampled ~~signals~~ data stream corresponding to a plurality of multipath components, the plurality of processing units receiving data signals and performing correlation functions on the data signals;

a controller, coupled to the plurality of processing units over a control signal path, the controller outputting the configuration information to the plurality of processing units to configure the plurality of processing units;

an interpolator coupled to the signal acquisition section and receiving ~~a~~ the sampled data stream, the interpolator generating an interpolated data stream including data derived from the sampled data stream; and

a timing selection circuit identifying one of the values of the interpolated data stream as a representative data sample, the timing selection circuit being positioned within one of the plurality of processing units.

51. A receiver section for a spread spectrum communication system, the receiver section comprising:

a plurality of processing units, at least one of the plurality of processing units including first and second correlator resources, each correlator resource ~~configured~~ configurable to perform at least one of a plurality of correlation functions;

a signal acquisition section, the signal acquisition section configured to receive analog communication signals, the signal acquisition section outputting a sampled data stream ~~signals~~ corresponding to a plurality of multipath components, the plurality of processing units receiving data signals and performing correlation functions on the data signals;

a controller, coupled to the plurality of processing units over a control signal path, the controller outputting configuration information to the plurality of processing units to configure the plurality of processing units; wherein the first correlator resource is powered down during a first time period and the second correlator resource is powered on during the first time period.

52. The receiver section of Claim 51, wherein the first and second correlator resources are each configurable to perform a the plurality of correlation functions.

Claims 1-4, 6, 7, 12-27, and 38-52 are renumbered as claims 1-37, respectively, and the claim dependency is renumbered accordingly.

3. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings submitted on January 23, 2006 are not legible; the text labels are too small to read. Furthermore, the remaining original sheets (1-10) submitted on January 25, 2002 have reference numerals and text labels which are not

plainly legible. The corrected drawings are required in reply to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Allowable Subject Matter

4. Claims 1-4, 6, 7, 12-27, and 38-52 respectively renumbered as claims 1-37 are allowed.

5. The following is an examiner's statement of reasons for allowance:

Claims 1-4, 6, 7, 12-27, and 38-52 respectively renumbered as claims 1-37 are allowed because the prior art of record does not disclose or obviate a receiver with a plurality of processing units each comprised of a plurality of correlator resources wherein each of the plurality of correlator resources can be configured to perform one of a plurality of functions.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Perilla whose telephone number is (571) 272-3055. The examiner can normally be reached on M-F 8-5 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason M. Perilla
March 31, 2006

jmp

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER